

In the Claims

1           1.     [Original] In a networked computer system including at least one  
2 client system, a resource server and at least one system resource accessible to  
3 the resource server wherein the at least one client system and the resource  
4 server are interconnected by a communications network and wherein a client  
5 system includes a processor for executing an application program for issuing a  
6 resource job including job instructions directing a resource to perform an  
7 operation and job data to be operated upon by the resource in performing the  
8 operation to the resource server, the resource server being responsive to a  
9 resource job for directing the job instructions and job data to a resource  
10 accessible to the resource server and the resource being responsive to the job  
11 instructions and job data for returning corresponding job result information to the  
12 resource server, a system resource usage monitoring system, comprising:

13           in the resource server,  
14           a job processor for  
15           forwarding the job instructions and job data of a resource job to a  
16 resource accessible to the resource server, and

17           extracting job attribute information from the resource job wherein the job  
18 attribute information includes information identifying system resources to be  
19 used in executing the resource job,

20           a resource agent for  
21           receiving job attribute information from the job processor and job result  
22 information returned from the resource wherein the job result information  
23 identifies the results achieved by the resource in response to the resource job,  
24 and

25           forwarding the job attribute information and the job result information to a  
26 collecting server,

27           the collecting server including  
28           a resource collector for receiving the job attribute information and the job  
29 result information and generating corresponding job detail information  
30 representing system resources used in executing the resource job, and

31           a database for storing the job details.

1           2.     [Original] The resource usage monitoring system of claim 1,  
2 further comprising:

3           a resource manager system communicating with the collecting server  
4 through the network for reading the job details from the database and providing  
5 the job details to a user of the resource manager system for monitoring resource  
6 usage.

1           3.     [Original] The resource usage monitoring system of claim 1,  
2 wherein:

3           the resource agent includes a dynamic discovery function for identifying a  
4 current location of a current resource collector on the network and transmitting  
5 job attribute information and job result information to the current collecting  
6 server.

1           4.     [Original] The resource usage monitoring system of claim 1,  
2 wherein:

3           the system resource manager includes a dynamic discovery function for  
4 identifying a current location of a current collecting server on the network and  
5 reading job details from the database in the current collecting server.

1           5.     [Original] The resource usage monitoring system of claim 1,  
2 wherein:

3           a client system further includes

4           a local resource accessible to the client system, wherein the client system  
5 transmits the job instructions and job data of a resource job to the local  
6 resource, and

7           a job capture mechanism for

8           capturing the job instructions and job data transmitted to the local  
9 resource and job result information returned by the local resource,

10          extracting the job attribute information from the captured job instructions  
11 and job data, and

12          forwarding the job attribute information and job result information to the  
13 resource server.

1           6.   [Original] The resource usage monitoring system of claim 1,  
2 wherein:

3           a client system further includes

4           a local resource accessible to the client system, wherein the client system  
5 transmits the job instructions and job data of a resource job to the local  
6 resource, and

7           a job capture mechanism for

8           capturing the job instructions and job data transmitted to the local  
9 resource and job result information returned by the local resource, and

10          forwarding the job instructions, job data and job result information to the  
11 resource server.

1           21. [Amended] In a networked computer system including at least one  
2 client system, a print server and at least one printer accessible to the print  
3 server wherein the at least one client system and the print server are  
4 interconnected by a communications network and wherein a client system  
5 includes a processor for executing an application program for issuing a print job  
6 including print instructions for printing a document file and document data to be  
7 printed to the print server, the print server being responsive to a print job for  
8 directing the print instructions and document data to a printer accessible to the  
9 print server being responsive to the print instructions and document data for  
10 providing corresponding job result information to the print server, a system  
11 resource usage monitoring system, comprising:

12          in the print server,

13          a job processor for

14          forwarding the print instructions and document data of a print job to a  
15 printer accessible to the print server, and

16          extracting job attribute information from the print job wherein the job  
17 attribute information includes information identifying system resources to be  
18 used in executing the print job,

19          a resource agent for

20          receiving job attribute information from the job processor and job result  
21 information returned from the printer wherein the job result information identifies

22 the results achieved by the printer in response to the print job, and  
 23 forwarding the job attribute information and the job result information to a  
 24 resource collecting server,  
 25 the resource collecting server including  
 26 a resource collector for receiving the job attribute information and the job  
 27 result information and generating corresponding job detail information  
 28 representing system resources used in executing the print job, and  
 29 a database for storing the job details, and  
 30 wherein the resource agent includes a dynamic discovery function for  
 31 identifying a current location of a current resource collecting server on the  
 32 network, for transmitting job attribute information and job result information to  
 33 the current resource collecting server.

1 <sup>22</sup>/<sub>8</sub>. The resource usage monitoring system of claim <sup>21</sup>/<sub>7</sub>, further  
 2 comprising:

3 a resource manager system communicating with the resource collecting  
 4 server through the network for reading the job details from the database and  
 5 providing the job details to a user of the resource manager system for  
 6 monitoring resource usage.

1 [ 9. Cancel. ✓

1 <sup>23</sup>/<sub>10</sub>. [Amended] The resource usage monitoring system of claim <sup>21</sup>/<sub>7</sub>,  
 2 wherein:

3 the system resource manager includes a dynamic discovery function for  
 4 identifying a current location of a the current resource collecting server on the  
 5 network, for reading job details from the database in the current resource  
 6 collecting server.

1 <sup>24</sup>/<sub>11</sub>. [Original] The resource usage monitoring system of claim <sup>21</sup>/<sub>7</sub>,  
 2 wherein:

3 a client system further includes  
 4 a local printer accessible to the client system, wherein the client system

5 transmits the print instructions and document data of a print job to the local  
 6 printer, and  
 7 a job capture mechanism for  
 8 capturing the print instructions and document data transmitted to the  
 9 local printer and job result information returned by the local printer,  
 10 extracting the job attribute information from the captured print  
 11 instructions and document data, and  
 12 forwarding the job attribute information and job result information to the  
 13 print server.

1 <sup>25</sup>/<sub>12</sub>. [Original] The resource usage monitoring system of claim <sup>21</sup>/<sub>7</sub>,  
 2 wherein:

3 a client system further includes  
 4 a local printer accessible to the client system, wherein the client system  
 5 transmits the print instructions and document data of a print job to the local  
 6 printer, and  
 7 a job capture mechanism for  
 8 capturing the print instructions and document data transmitted to the  
 9 local printer and job result information returned by the local printer, and  
 10 forwarding the print instructions, document data and job result  
 11 information to the print server.

1 <sup>11</sup>/<sub>13</sub>. [Original] In a networked computer system including at least one  
 2 client system, a resource server and at least one system resource accessible to  
 3 the resource server wherein the at least one client system and the resource  
 4 server are interconnected by a communications network and wherein a client  
 5 system includes a processor for executing an application program for issuing a  
 6 resource job including job instructions directing a resource to perform an  
 7 operation and job data to be operated upon by the resource in performing the  
 8 operation to the resource server, the resource server being responsive to a  
 9 resource job for directing the job instructions and job data to a resource  
 10 accessible to the resource server and the resource being responsive to the job  
 11 instructions and job data for returning corresponding job result information to the

12 resource server, a method for monitoring usage of system resources, comprising  
13 the steps of:

14 forwarding a resource job to the resource server,

15 forwarding the job instructions and the job data of a resource job from the  
16 resource server to a resource accessible to the resource server,

17 extracting job attribute information from the resource job wherein the job  
18 attribute information includes information identifying system resources to be  
19 used in executing the resource job,

20 returning job result information from the resource receiving the resource  
21 job to the resource server wherein the job result information identifies the results  
22 achieved by the resource in response to the resource job,

23 forwarding the job attribute information and job result information  
24 returned from the resource to a collecting server,

25 generating corresponding job detail information representing system  
26 resources used in executing the resource job, and

27 storing the job details in a database.

1 <sup>13</sup>/<sub>4</sub>. [Original] The method for monitoring usage of system resources of  
2 claim ~~13~~, further comprising the steps of:

3 communicating with the collecting server through the network for reading  
4 the job details from the database and reading the job details to a user of a  
5 resource manager system for use in monitoring resource usage.

1 <sup>13</sup>/<sub>5</sub>. [Original] The method for monitoring usage of system resources of  
2 claim ~~13~~, further comprising the steps of:

3 executing a dynamic discovery function to identify a current location of a  
4 current collecting server on the network and transmitting job attribute  
5 information and job result information to the current collecting server.

14  
16. [Original] The method for monitoring usage of system resources of  
claim 13, further comprising the steps of:  
executing a dynamic discovery operation to identify a current location of  
a current collecting server on the network and reading job details from the  
database in the current collecting server.

15  
17. [Original] The method for monitoring usage of system resources of  
claim 13, further comprising the steps of:  
forwarding the job instructions and job data of a resource job from a  
client system to a local resource accessible to the client system,  
capturing the job instructions and job data transmitted to the local  
resource and job result information returned by the local resource,  
extracting the job attribute information from the captured job instructions  
and job data, and  
forwarding the job attribute information and job result information to the  
resource server.

16  
18. [Original] The method for monitoring usage of system resources of  
claim 13, further comprising the steps of:  
forwarding the job instructions and job data of a resource job to a local  
resource accessible to the client system,  
capturing the job instructions and job data transmitted to the local  
resource and job result information returned by the local resource, and  
forwarding the job instructions, job data and job result information to the  
resource server.

17  
19. [Original] The method for monitoring usage of system resources of  
claim 13 wherein the resource is a printer, the resource job is a print job and the  
job instructions and job data of the resource job are printing instructions and  
document data.

1 <sup>7</sup>20. [New] The resource usage monitoring system of claim 1, wherein  
 2 the job result information comprises an indication that the resource job has been  
 3 successfully imaged.

1 <sup>8</sup>21. [New] The resource usage monitoring system of claim 1, wherein  
 2 the job result information comprises a message indicating a time of receipt of  
 3 the resource job by the resource.

1 <sup>9</sup>22. [New] The resource usage monitoring system of claim 1, wherein  
 2 the job result information comprises a message indicating a time of completion  
 3 of imaging of the resource job.

C<sup>2</sup> 1 <sup>10</sup>23. [New] The resource usage monitoring system of claim 1, wherein  
 2 the job result information comprises information regarding an amount of a  
 3 consumable used to image the resource job.

1 <sup>18</sup>24. [New] The method for monitoring usage of system resources of  
 2 claim <sup>11</sup>13, wherein the job result information comprises an indication of whether  
 3 the print job has been successfully printed.

1 <sup>19</sup>25. [New] The method for monitoring usage of system resources of  
 2 claim <sup>18</sup>24, wherein the job result information comprises a message indicating a  
 3 time of receipt of the resource job by the resource and a time of completion of  
 4 imaging of the resource job.

1 <sup>20</sup>26. [New] The method for monitoring usage of system resources of  
 2 claim <sup>19</sup>25, wherein the job result information comprises information regarding an  
 3 amount of a consumable used to image the resource job.